

## SEQUENCE LISTING

<110> Applied Research Systems ARS Holding N.V.  
<120> Novel leader sequences for use in production of proteins  
<130> 884 WO  
<160> 58  
<170> PatentIn version 3.1  
<210> 1  
<211> 29  
<212> PRT  
<213> Artificial  
<220>  
<221> source  
<223> /note="Description of artificial sequence: IgSP-tPA pre-propeptide"  
<220>  
<221> SIGNAL  
<222> (1)..(19)  
<223> murine immunoglobulin signal peptide  
<220>  
<221> PROPEP  
<222> (20)..(29)  
<223> human tissue plasminogen activator propeptide  
<400> 1  
Met Lys Cys Ser Trp Val Ile Phe Phe Leu Met Ala Val Val Thr Gly  
1 5 10 15  
Val Asn Ser Ser Gln Glu Ile His Ala Arg Phe Arg Arg  
20 25  
<210> 2  
<211> 35  
<212> PRT  
<213> Homo sapiens  
<400> 2  
Met Asp Ala Met Lys Arg Gly Leu Cys Cys Val Leu Leu Leu Cys Gly  
1 5 10 15  
Ala Val Phe Val Ser Pro Ser Gln Glu Ile His Ala Arg Phe Arg Arg  
20 25 30  
Gly Ala Arg  
35

<210> 3  
<211> 19  
<212> PRT  
<213> Mus musculus

<220>  
<221> SIGNAL  
<222> (1)..(19)  
<223>

<400> 3

Met Lys Cys Ser Trp Val Ile Phe Phe Leu Met Ala Val Val Thr Gly  
1 5 10 15

Val Asn Ser

<210> 4  
<211> 26  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SIGNAL  
<222> (1)..(26)  
<223>

<400> 4

Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Leu Ala Phe Gly Leu Leu  
1 5 10 15

Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala  
20 25

<210> 5  
<211> 17  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SIGNAL  
<222> (1)..(17)  
<223>

<400> 5

Met Leu Leu Leu Leu Leu Leu Leu Gly Leu Arg Leu Gln Leu Ser Leu  
1 5 10 15

Gly

<210> 6  
 <211> 87  
 <212> DNA  
 <213> Artificial

<220>  
 <221> source  
 <223> /note="Description of artificial sequence: nucleic acid encoding IgSP-tPA pre-propeptide"

<400> 6  
 atgaagtgc gctgggtgat cttcttcctg atggccgtgg tgaccggcgt gaattccagc 60  
 caggagatcc acgccagggt cgcaga 87

<210> 7  
 <211> 105  
 <212> DNA  
 <213> Homo sapiens

<400> 7  
 atggacgcc tgaagcgcg cctgtgctgc gtgctgctgc tgtgcggcgc cgtgttcgtg 60  
 agccccagcc aggagatcca cgccagggtc cgcagaggcg ccaga 105

<210> 8  
 <211> 57  
 <212> DNA  
 <213> Mus musculus

<400> 8  
 atgaagtgc gctgggtgat cttcttcctg atggccgtgg tgaccggcgt gaattcc 57

<210> 9  
 <211> 161  
 <212> PRT  
 <213> Homo sapiens

<400> 9

Asp Ser Val Cys Pro Gln Gly Lys Tyr Ile His Pro Gln Asn Asn Ser  
 1 5 10 15

Ile Cys Cys Thr Lys Cys His Lys Gly Thr Tyr Leu Tyr Asn Asp Cys  
 20 25 30

Pro Gly Pro Gly Gln Asp Thr Asp Cys Arg Glu Cys Glu Ser Gly Ser  
 35 40 45

Phe Thr Ala Ser Glu Asn His Leu Arg His Cys Leu Ser Cys Ser Lys  
 50 55 60

Cys Arg Lys Glu Met Gly Gln Val Glu Ile Ser Ser Cys Thr Val Asp

4/15

65                                      70                                      75                                      80  
 Arg Asp Thr Val Cys Gly Cys Arg Lys Asn Gln Tyr Arg His Tyr Trp  
    85                                      90                                      95  
 Ser Glu Asn Leu Phe Gln Cys Phe Asn Cys Ser Leu Cys Leu Asn Gly  
    100                                      105                                      110  
 Thr Val His Leu Ser Cys Gln Glu Lys Gln Asn Thr Val Cys Thr Cys  
    115                                      120                                      125  
 His Ala Gly Phe Phe Leu Arg Glu Asn Glu Cys Val Ser Cys Ser Asn  
    130                                      135                                      140  
 Cys Lys Lys Ser Leu Glu Cys Thr Lys Leu Cys Leu Pro Gln Ile Glu  
    145                                      150                                      155                                      160  
 Asn  
  
 <210> 10  
 <211> 239  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 10  
 Met Leu Leu Ser Gln Asn Ala Phe Ile Val Arg Ser Leu Asn Leu Val  
   1   5   10   15  
 Leu Met Val Tyr Ile Ser Leu Val Phe Gly Ile Ser Tyr Asp Ser Pro  
    20   25   30  
 Asp Tyr Thr Asp Glu Ser Cys Thr Phe Lys Ile Ser Leu Arg Asn Phe  
    35   40   45  
 Arg Ser Ile Leu Ser Trp Glu Leu Lys Asn His Ser Ile Val Pro Thr  
    50   55   60  
 His Tyr Thr Leu Leu Tyr Thr Ile Met Ser Lys Pro Glu Asp Leu Lys  
   65   70   75   80  
 Val Val Lys Asn Cys Ala Asn Thr Thr Arg Ser Phe Cys Asp Leu Thr  
    85   90   95  
 Asp Glu Trp Arg Ser Thr His Glu Ala Tyr Val Thr Val Leu Glu Gly  
    100   105   110

Phe Ser Gly Asn Thr Thr Leu Phe Ser Cys Ser His Asn Phe Trp Leu  
 115 120 125

Ala Ile Asp Met Ser Phe Glu Pro Pro Glu Phe Glu Ile Val Gly Phe  
 130 135 140

Thr Asn His Ile Asn Val Met Val Lys Phe Pro Ser Ile Val Glu Glu  
 145 150 155 160

Glu Leu Gln Phe Asp Leu Ser Leu Val Ile Glu Glu Gln Ser Glu Gly  
 165 170 175

Ile Val Lys Lys His Lys Pro Glu Ile Lys Gly Asn Met Ser Gly Asn  
 180 185 190

Phe Thr Tyr Ile Ile Asp Lys Leu Ile Pro Asn Thr Asn Tyr Cys Val  
 195 200 205

Ser Val Tyr Leu Glu His Ser Asp Glu Gln Ala Val Ile Lys Ser Pro  
 210 215 220

Leu Lys Cys Thr Leu Leu Pro Pro Gly Gln Glu Ser Glu Phe Ser  
 225 230 235

<210> 11  
 <211> 34  
 <212> DNA  
 <213> Artificial

<220>  
 <221> source  
 <223> /note="Description of artificial sequence: primer"

<400> 11  
 tgctctagag cgtcacccct agagtcgagc tgtg

34

<210> 12  
 <211> 59  
 <212> DNA  
 <213> Artificial

<220>  
 <221> source  
 <223> /note="Description of artificial sequence: primer"

<400> 12  
 ggcgttgagc ggccgcggtt catgacgcta gcaccgaatt caccctgta accactgcc

59

<210> 13  
 <211> 51

<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 13  
cgcagatctg gtctcgcatg aagtgcagct gggatgatctt cttcctgatg g 51

<210> 14  
<211> 43  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 14  
ccgtgggtgac cggcgtgaat tccgacagcg tgtgccctca ggg 43

<210> 15  
<211> 52  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 15  
caagtacatc caccctcaga acaacagcat ctgctgcacc aagtgccaca ag 52

<210> 16  
<211> 26  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 16  
ggcacctacc tgtacaacga ctgccc 26

<210> 17  
<211> 51  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 17  
gggcagtcgt tgtacaggta ggtgcccttg tggcacttgg tgcagcagat g 51

<210> 18  
<211> 48  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 18  
ctgttgttct gaggggtggat gtacttgccc tgagggcaca cgctgtcg 48

<210> 19  
<211> 48  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 19  
gaattcacgc cggtcaccac ggccatcagg aagaagatca cccagctg 48

<210> 20  
<211> 25  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 20  
cacttcatgc gagaccagat ctgcg 25

<210> 21  
<211> 47  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 21  
ccacaccatg gccaccggca gccgcaccag cctgctgctg gccttcg 47

<210> 22  
<211> 50  
<212> DNA  
<213> Artificial

<220>  
<221> source

<223> /note="Description of artificial sequence: primer"

<400> 22  
gcctgctgtg cctgccctgg ctgcaggagg gcagcgccga cagcgtgtgc 50

<210> 23  
<211> 53  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 23  
cctcagggca agtacatcca ccctcagaac aacagcatct gctgcaccaa gtg 53

<210> 24  
<211> 52  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 24  
ccacaagggc acctacctgt acaacgactg ccctggccct ggccaggaca cc 52

<210> 25  
<211> 52  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 25  
gactgccgag agtgcgagag cggcagcttc accgccagcg agaaccacct gc 52

<210> 26  
<211> 55  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 26  
gccactgcct gagctgcagc aagtgccgca aggagatggg ccaggtggag atcag 55

<210> 27  
<211> 25  
<212> DNA



<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 27  
cagctgcacc gtggaccgcg acacc 25

<210> 28  
<211> 53  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 28  
gggtgcgcgg tccacgggtgc agctgctgat ctccacctgg cccatctcct tgc 53

<210> 29  
<211> 53  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 29  
ggcacttgct gcagctcagg cagtggcgca ggtgggtctc gctggcggtg aag 53

<210> 30  
<211> 53  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 30  
ctgccgtct cgcactcgcg gcagtcggtg tctggccag ggccagggca gtc 53

<210> 31  
<211> 56  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 31  
gttgtacagg taggtgccct tgtggcactt ggtgcagcag atgctgttgt tctgag 56

<210> 32  
<211> 49  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 32  
ggatgatgta cttgccctga gggcacacgc tgcggcgct gccctcctg

49

<210> 33  
<211> 47  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 33  
cagccagggc aggcacagca ggccgaaggc cagcagcagg ctggtgc

47

<210> 34  
<211> 23  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 34  
ggctgccggt ggccatggtg tgg

23

<210> 35  
<211> 49  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 35  
gctcgagatc tggctctgca tgctgctgct gctgctgctg ctgggcctg

49

<210> 36  
<211> 41  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 36  
aggctccagc tctccctggg cgacagcgtg tgccctcagg g 41

<210> 37  
<211> 43  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 37  
gcccagggag agctggagcc tcaggcccag cagcagcagc agc 43

<210> 38  
<211> 52  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 38  
caagtacatc caccctcaga acaacagcat ctgctgcacc aagtgccaca ag 52

<210> 39  
<211> 26  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 39  
ggcacctacc tgtacaacga ctgccc 26

<210> 40  
<211> 51  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 40  
gggcagtcgt tgtacaggta ggtgcccttg tggcacttgg tgcagcagat g 51

<210> 41  
<211> 47  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 41  
ctggtgttct gaggtggat gtacttgccc tgagggcaca cgctgtc 47  
  
<210> 42  
<211> 51  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 42  
cgcagatctg gtctcgcatg aagtgcagct gggatgatctt ctctctgatg g 51  
  
<210> 43  
<211> 52  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 43  
caagtacatc caccctcaga acaacagcat ctgctgcacc aagtgccaca ag 52  
  
<210> 44  
<211> 26  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 44  
ggcacctacc tgtacaacga ctgccc 26  
  
<210> 45  
<211> 51  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 45  
gggcagtcgt tgtacaggta ggtgcccttg tggcacttgg tgcagcagat g 51

<210> 46  
<211> 47  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 46  
ctgttgttct gagggtggat gtacttgccc tgagggcaca cgctgtc 47  
  
<210> 47  
<211> 40  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 47  
tctggcgctt ctgcggaacc tggcgtggat ctctggctg 40  
  
<210> 48  
<211> 48  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 48  
gaattcacgc cggtcaccac ggccatcagg aagaagatca cccagctg 48  
  
<210> 49  
<211> 43  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 49  
ccgtggtgac cggcgtgaat tccagccagg agatccacgc cag 43  
  
<210> 50  
<211> 486  
<212> DNA  
<213> Homo sapiens  
  
<400> 50  
gacagcgtgt gccctcaggg caagtacatc caccctcaga acaacagcat ctgctgcacc 60  
aagtgccaca agggcaccta cctgtacaac gactgccctg gccctggcca ggacaccgac 120

tgccgcgagt gcgagagcgg cagcttcacc gccagcgaga accacctgcg ccactgcctg 180  
agctgcagca agtgccgcaa ggagatgggc caggtggaga tcagcagctg caccgtggac 240  
cgcgacaccg tgtgcggtg cgcgaagaac cagtaccgcc actactggag cgagaacctg 300  
ttccagtgt tcaactgcag cctgtgcctg aacggcaccg tgcacctgag ctgccaggag 360  
aagcagaaca ccgtgtgcac ctgccacgcc ggcttcttcc tgcgcgagaa cgagtgcgtg 420  
agctgcagca actgcaagaa gagcctggag tgcaccaagc tgtgcctgcc tcagatcgag 480  
aactaa 486

<210> 51  
<211> 19  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 51  
ctagcaaat aggctgtcc 19

<210> 52  
<211> 34  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 52  
gttccgcaga gacagcgtgt gccctcaggg caag 34

<210> 53  
<211> 31  
<212> DNA  
<213> Artificial

<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"

<400> 53  
cacgctgtct ctgcggaacc tggcgtggat c 31

<210> 54  
<211> 53  
<212> DNA  
<213> Artificial

<220>

<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 54  
ctgccgctct cgcactcgcg gcagtcggtg tcctggccag ggccagggca gtc 53  
  
<210> 55  
<211> 53  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 55  
ctgctgctgt gcggcgccgt gttcgtgagc cccagccagg agatccacgc cag 53  
  
<210> 56  
<211> 53  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 56  
ctgccgctct cgcactcgcg gcagtcggtg tcctggccag ggccagggca gtc 53  
  
<210> 57  
<211> 57  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 57  
gggctcacga acacggcgcc gcacagcagc agcacgcagc acaggccgcg cttcatg 57  
  
<210> 58  
<211> 30  
<212> DNA  
<213> Artificial  
  
<220>  
<221> source  
<223> /note="Description of artificial sequence: primer"  
  
<400> 58  
gccaccatgg acgccatgaa gcgcggcctg 30